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Int. Cl.:—B 65 b

COMPLETE SPECIFICATION

Carrier and Multi-Container Package

We, JOHN BURTON MACHINE CORPORATION, a Corporation organised under the laws

ERRATA

SPECIFICATION No. 1,004,118
Amendment No. 1

Page 1, Heading, Date of Application, for
"Jun. 15, 1963" read "Jan. 15, 1963."
Page 2, line 28, for "packagee," read "pack-
age"
Page 5, line 104, after "arranged" delete
"whole line"

THE PATENT OFFICE
19th August 1966

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25 bottom has been connected with the lifting means so that the load or contents of the carton is transmitted to the lifting means through the bottom and vertical walls.

The high costs involved in forming packages in which the cartons or sleeves have been employed has heretofore been considered unavoidable due to the fact that it has been thought that non-enclosing carriers will not hold the containers together with sufficient security. In most instances the containers have been loosely held, or where attempts have been made to hold them securely, it has been too difficult to remove them and the means employed has been either too costly to make economically or too difficult to attach.

One of the main objects of the present invention is the provision of a carrier in which the containers will be held firmly together at their upper ends and, when carried, will not swing outwardly at their lower ends relative to the carrier.

engaging opening being provided in the said part so as to register with the neck-receiving opening and so that, when the carrier is in use with a container neck projecting through each of the neck-receiving openings, the edges of said container-engaging openings can be engaged with said downwardly facing surfaces of said containers to retain the latter in the carrier.

The invention will be described further, by way of example, with reference to the accompanying drawings in which:—

Fig. 1 is a plan view of a preferred embodiment of carrier blank according to the invention;

Fig. 2 is an enlarged fragmentary view of a portion of the blank of Fig. 1;

Fig. 3 is an isometric view of a container package embodying a carrier formed from the blank of Fig. 1, a tear-off portion of the carrier being indicated in dotted lines projecting laterally therefrom;

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PATENT SPECIFICATION

DRAWINGS ATTACHED

1004118

Date of Application and filing Complete Specification: Jun. 15, 1963.

No. 1872/63.

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COMPLETE SPECIFICATION

Carrier and Multi-Container Package

We, JOHN BURTON MACHINE CORPORATION, a Corporation organised under the laws of the State of California, United States of America, of 1600 West Street, Concord, California, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a carrier for a plurality of containers, which may be conventional glass bottles such as are commonly used for malt beverages, or may be cans of metal or of any suitable material.

Heretofore it has been the common practice to substantially enclose one or more rows of bottles in a carton or sleeve of cardboard to form a package. Such cartons or sleeves have been formed with lifting means in the form of handles provided with finger openings for carrying the package, but usually the containers, such as the bottles, have been supported on the bottom of the carrier and said bottom has been connected with the lifting means so that the load or contents of the carton is transmitted to the lifting means through the bottom and vertical walls.

The high costs involved in forming packages in which the cartons or sleeves have been employed has heretofore been considered unavoidable due to the fact that it has been thought that non-enclosing carriers will not hold the containers together with sufficient security. In most instances the containers have been loosely held, or where attempts have been made to hold them securely, it has been too difficult to remove them and the means employed has been either too costly to make economically or too difficult to attach.

One of the main objects of the present invention is the provision of a carrier in which the containers will be held firmly together at their upper ends and, when carried, will not swing outwardly at their lower ends rela-

tive to each other, but automatically stay in firm engagement with each other.

Another object of the invention is the provision of a carrier which is more economical than has heretofore been provided for forming a package of bottles and the like, and which means is of a structure that is easily applied and may be made of relatively cheap cardboard but yet be strong and relatively rigid.

With these objects in view, the present invention provides a carrier blank, for necked containers wherein a downwardly facing surface is present around the neck of each container, comprising an element of sheet material, such as cardboard, formed with two or more neck-receiving openings each of which is spaced from an adjacent edge of the blank to provide, between each such opening and the said adjacent edge, a wide marginal portion which is formed with folding creases permitting that part of the marginal portion which adjoins said edge to be folded to overlie the neck-receiving opening, a container-engaging opening being provided in the said part so as to register with the neck-receiving opening and so that, when the carrier is in use with a container neck projecting through each of the neck-receiving openings, the edges of said container-engaging openings can be engaged with said downwardly facing surfaces of said containers to retain the latter in the carrier.

The invention will be described further, by way of example, with reference to the accompanying drawings in which:—

Fig. 1 is a plan view of a preferred embodiment of carrier blank according to the invention;

Fig. 2 is an enlarged fragmentary view of a portion of the blank of Fig. 1;

Fig. 3 is an isometric view of a container package embodying a carrier formed from the blank of Fig. 1, a tear-off portion of the carrier being indicated in dotted lines projecting laterally therefrom;

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Fig. 4 is a top plan view of the package of Fig. 3;

Fig. 5 is an enlarged fragmentary elevational view of a portion of the package of Figs. 3 and 4, as seen from one end thereof;

Fig. 6 is a view similar to that of Fig. 5, except that the carrier is shown in cross section, a dotted line position of the container being indicated to show the tendency of the container to swing when the package is lifted;

Fig. 7 is a plan view of a blank adapted for only four containers; and

Fig. 8 is a reduced size end elevational view of a package in which the containers are each enclosed in a protective open work sleeve of plastic shrunk onto the container.

Hereinafter the word "bottle" or "bottles" is not intended to be restrictive to bottles of any particular material, unless specifically qualified.

The blank of Fig. 1, generally designated by reference numeral 1, is rectangular, having four straight edges 2 and 3, and while the blank is substantially square in outline the two opposite edges 2 will be called end edges, while the edges 3 will be called side edges. This is because the edges 2 will be at the ends of a completed package, formed using the blank 1, as will later be described, while the edges 3 will extend longitudinally of the package.

The blank 1 is intended for use in forming a six-pack package, or a package of six bottles, and it is formed with a central line of weakness 4, provided by perforations or slits, midway between the side edges 3.

Equally spaced on opposite sides of the central line of weakness 4 are folding creases 5 that are parallel with the side edges 3. These folding creases 5 define the limits of a central body of the blank that remains horizontal in a position extending over the main bodies of the bottles after the package is formed.

Adjacent to each of the folding creases 5 and between the central line of weakness 4 and the creases 5, are three neck receiving openings 6. These are closer to the folding creases 5 than to the central line of weakness 4.

As best seen in Fig. 2, which shows two of the neck-receiving openings 6, these openings 6 are elongate, being generally elliptical. The major axis of each endmost opening 6 (i.e. each opening 6 which lies adjacent one of the end edges 2) is substantially at right angles to an imaginary line 7 (Fig. 2) that extends through the centre of the respective openings 6 from a point 8 disposed centrally between the end edges 2 and the side edges 3 of the blank 1, while the major axes of the two central openings 6 are each substantially at right angles to an imaginary line 9 extending from the centre of the respective opening 6 to said point 8.

The marginal portions of each of the neck-receiving openings 6 are formed with a plurality of cuts or slits 10 each extending generally radially outwardly from a point 11 disposed on the minor axis of the respective opening 6 and closer to that edge of the opening that is nearest point 8 than to the opposite edge, and said cuts or slits 10 extend to points on a circle developed about each point 11; hence the sections 13 of each marginal portion between the cuts or slits 10 that are at the side of each opening 6 nearest to the point 8 are longer than the sections 14 at the opposite side of each opening. The importance of this structure will later be described more in detail.

Oppositely outwardly of the pair of folding creases 5 are relatively wide marginal portions or extensions of the blank, generally designated by reference numerals 15, each of which is formed with a pair of spaced folding creases 16, 17 that are parallel with the creases 5.

The marginal portions 15 are each formed with substantially semicircular, similar cuts 18, that are aligned with respective ones of the openings 6 in direction across the blank along lines perpendicular to the central line of weakness 4 and to the creases 5, 16, 17. These cuts 18 are formed in terminating outer marginal portions 19 that lie between the respective folding creases 17 and the adjacent side edges 3, and the ends of the cuts 18 in each portion 19 terminate on the respective crease 17.

Extending slightly divergently from the terminating ends of the cuts 18, across the portions 21 that are between creases 16, 17 and across portions 22 that are between creases 5, 16, are lines of weakness 25 that may be perforations or slits or the like that will facilitate tearing along said lines.

These lines of weakness 25 terminate adjacent to the outer ends of respective cuts or slits 10 that are formed in the marginal portions around each of the neck-receiving openings 6. Continuations of the lines of weakness 25 from each of the cuts 18 would extend tangentially to a circle through the root ends of the slits 10 of the respective adjacent opening 6; hence upon pulling the tab 26 defined by each cut 18 out of the plane of the blank, an extension 27, between lines 25 of such tab 26 would be removed to the outer ends of the cuts 10 around the respective opening 6 adjacent thereto.

It should be noted that the creases 17 do not extend across the tab extensions 27 between the ends of the semicircular cuts 18, but the creases 16 do extend across said portions.

The central portion of blank 1, wherein the central line of weakness 4 is disposed, is cut along circular lines to form a pair of tabs 28. The cuts that form each of these tabs terminate at their ends at points equally

spaced from the opposite sides of line 4, and creases 29 extend across the line 4 to connect said ends.

5 These tabs 28 are bendable along the creases 29 to leave openings 30 into which two of the fingers of the hand of a person may be inserted, for carrying purposes. These open-
10 ings 30 are equally spaced from the end neck-receiving openings 6 at the ends of the blank and from the central pair of such openings 6.

In forming a package using the blank as just described, six bottles 35 are aligned in a pair of parallel rows each of three bottles in side by side relation. These bottles 35 each
15 have a neck 36 (Fig. 6) of restricted diameter, and a cap 37 is secured over the upper end of each such neck 36. Each cap 37 projects radially outwardly of the neck 36 and has an axially downwardly facing surface 39.

20 The caps 37 are aligned with the neck-receiving openings 6 and the blank is forced down over the caps 37 so that the sections 13, 14 of the blank around the marginal portions of the openings 6 will yield or spring
25 out of the plane of the blank to permit the caps 37 to pass through the openings 6. The lengths of the cuts or slits 10 are such as to permit the sections 13, 14 to so spring past the caps 37, and once such sections clear the
30 caps they will snap below the downwardly facing surfaces 39 of the caps so that the terminating inner end edges of the sections 13 will face and engage with said surfaces 39. Once the sections 13, 14 spring past the
35 caps, the bottles cannot unintentionally be withdrawn from the opening 6.

The portions 22 between the creases 5, 16 are now bent upwardly to extend across the oppositely outwardly facing sides of the pair
40 of rows of the caps 37 on the bottles 35, and it should be noted that the width of each portion 22 is such that the portion 21 adjacent thereto and disposed between the creases 16, 17 will be positioned horizontally on the re-
45 spective caps 37 when the free end edges of the sections 13 are substantially against the axially downwardly facing surfaces 39 of caps 37, and when the said portions 22 are against the lateral oppositely outwardly facing sides
50 of the respective row of caps 37 (Fig. 5).

When the portions 21 and 22 are in the above positions, the creases 17 extend across the upper ends of the respective caps 37
55 about centrally thereof, and by bending the terminating outer marginal portions 19 downwardly toward the central portion of the blank that lies between the creases 5, container-engaging openings 38 (Fig. 6) are
60 formed between the edges of the tabs 26 and the respective portion 19 through which the caps 37 project, along the adjacent sides of the rows of caps.

The proportions and arrangement of the portions 21, 22 and the edge of each semi-
60 circular cut 18 in the portion 19 from which

each tab 26 is stamped are such that the said edge of each of the container-engaging openings 38 will spring past the lower edge of the respective cap 37, and will be held
70 in engagement with said lower edge. At such time, the corresponding portion 22 will engage the side of each cap opposite to the edge of the opening 38 that engages the cap (Figs. 5, 6).

The portions 22 are inclined slightly rela-
75 tive to vertical to form reinforcing ribs, or webs, that resist bending of the resultant carrier formed by the blank when the carrier is lifted for carrying the bottles.

The finger openings 30, already described,
80 are positioned between the free side edges 3 of the carrier; hence they are always accessible to the fingers of the hand. The tabs 28 in the openings 30 become bent downwardly upon insertion of the fingers into the openings
85 30.

It is to be understood that the provision of finger openings in carriers for containers is not in itself new.

In Fig. 6 the dot-dash lines 41 indicate the
90 tendency of the bottles 35 to swing toward the central vertical axis extending through point 8 (Fig. 2) when the package is lifted by fingers in the finger openings 30. This is more than a mere tendency, since the bottles are effective
95 lifted from points below the caps 37 at the adjacent sides of the rows. Actually, the bottles 35 will fulcrum about the upwardly directed edges of the longer sections 13. This arrange-
100 ment and the result thereof must not be confused with the mere swinging of the lower ends of the rows of bottles laterally toward each other, as is common in can carriers and the like. In the present instance the lower
105 ends of the bottles will swing toward the central axis of the carrier until they engage each other along lines extending radially from said axis. The carrier itself will hold the upper ends of the bottles against relative movement.

As shown in Fig. 4 the tabs 26 and the
110 intermediate marginal portions 21 provide flat, horizontal platforms for stacking one package on another, and as the bottles 35 project slightly outwardly of the end edges of the carrier and the lateral sides of the latter, the
115 packages of bottles may be packed within cases of the same area as though there were no carriers, and there is nothing to interfere with the use of egg-crate type of partitions in such case, if desired.

The provision of the line of weakness 4
120 centrally between the rows of bottles does not in any way impair the carrier for lifting and carrying the bottles, but it does enable the separating of a package into two rows of
125 bottles where a purchaser desires only three bottles.

A transverse line of weakness, such as a row of slots or perforations 42 (Figs. 1, 3)
130 extends transversely across the blank between

two of the end neck-receiving openings 6 and the remainder of the openings. This enables a purchaser to separate the package into a package of two bottles leaving a package of four, or the blank of Fig. 1 may be modified, as seen in Fig. 7, to provide for a package of only four bottles. Obviously, the blank may be further modified to form a package of only two containers.

10 A single finger opening 43 (Fig. 7) is adequate for lifting a package of four bottles, and where only two bottles are in a package, the fingers of the hand can readily span the carrier to lift it from its edges.

15 Heretofore one of the main objections to carriers of the type that have been attempted for carrying bottles from their upper ends has been the difficulty in removing the bottles from the carriers. This has resulted in the making of carriers in which the necks extend loosely through openings in the carriers, and the carriers must be tilted to engage the caps. In these structures the bottles are not held tightly and frequently fall from the carriers.

25 In the present instance the tearable extensions 27 of the tabs 26 enable a user to quickly and easily remove said extensions by pulling the tabs 26 upwardly and since the inner ends of the extensions 27 terminate at the outer ends of the slits 10 that are at the sides of the bottle necks adjacent to the strips, the bottles may be readily removed, as desired, from the carrier, through the spaces left by removal of the strips 27. The tabs 26 thus perform the double function of being seats and covers for the caps and means for engagement by the fingers for tearing out strips provided by the extensions 40 27 up to the bottle necks to facilitate removal of the bottles. The dot-dash lines 43 in Fig. 3 show a strip 27 and the tab torn from the carrier.

Referring back to Fig. 5 it is seen that were it not for the fact that the portion 22 engages one side of the respective cap, yieldability of the sections 14, 13 would permit the necks of the bottles in one row to move laterally outwardly relative to the bottles in the other row, but said portion 22 in combination with the edge of the opening 38 prohibits such movement. Also, the fact that the edges of each opening 38 extend across the lateral opposite sides of each cap that face longitudinally of each row prevents movement of the upper ends of the bottles longitudinally of each row relative to each other. Thus the structure shows means for locking the upper ends of the bottles against withdrawal from the carrier blank axially of the carrier in a downward direction, and separate means for locking the upper ends of the bottles against lateral movement relative to each other and against downward movement 65 of the carrier relative to the bottles, and which

last mentioned means includes frangible or detachable means connected with both of said locking means tearable therefrom for releasing said bottles for lateral movement thereof out of the carrier.

In the construction so far described the outer surfaces of the bottles are uncovered except for whatever labelling is desired. The packages may be readily packed in cases, as has already been mentioned.

The package illustrated in Fig. 8 is the same in every respect as the package of Fig. 3 except that the bottles have open-work, or net-like sleeves 40 of flexible, relatively soft, plastic material, frictionally held thereon. A plastic such as a polyethylene is suitable. The mesh openings are so large relative to the material forming the mesh that very little of the outer surface of the bottle is covered by the material of the sleeve, hence the sleeve does not obscure any label on the bottle, and the filled bottles may be cooled with substantially the same efficiency as though the mesh sleeve were omitted. However, the combination of the carrier with the sleeve provides a package having substantially all of the advantages of one in which the bottles have no covering plus the provision of means for preventing rattling and breaking of bottles due to contact with each other. In addition, the mesh covering provides a roughened surface which can be easily grasped by the fingers of a hand and having heat insulating properties it makes the bottle, when chilled, more comfortable to hold in the hand, and reduces the transfer of heat from the hand to the bottle.

Heretofore in packages it has been customary for the carrier to provide the protective means for the containers, with the result of substantially increasing the cost of the carrier, and the containers will still swing against the spacing means. With the sleeves 40 in combination with the carrier of the invention, the sleeves will be held in close engagement with each other, thus avoiding the injurious and noisy impacts between bottles which would occur where there are extraneous spacers or spaces that are not carried by the containers, or where there are no spacers.

Before concluding, attention is called to the fact that the oppositely opening, channel-like structure formed by the portions between the folding creases 4, 5 and the portions 21 and 22 along each row of bottles, is what gives extreme rigidity to the carrier when the package is formed. In other words, without the approximately vertically disposed ribs provided by the portions 22 (Figs. 3, 5, 6, 8) which form the bottoms of the oppositely opening channels and the opposed horizontal sides of the channels, the upper of which sides are portions 21, the desired and essential rigidity

would be lost. The fact that the top and bottom sides of the channels are held snugly to the caps against upward movement of said sides is also important to the rigidity of the package.

It will be understood that changes in the size, form and construction of parts of the package and carrier blank may be made in the forms specifically disclosed herein without departing from the scope of the invention, as defined by the appended claims.

WHAT WE CLAIM IS:—

1. A carrier blank, for necked containers wherein a downwardly facing surface is present around the neck of each container, comprising an element of sheet material, such as cardboard, formed with two or more neck-receiving openings each of which is spaced from an adjacent edge of the blank to provide, between each such opening and the said adjacent edge, a wide marginal portion which is formed with folding creases permitting that part of the marginal portion which adjoins said edge to be folded to overlie the neck-receiving opening, a container-engaging opening being provided in the said part so as to register with the neck-receiving opening and so that, when the carrier is in use with a container neck projecting through each of the neck-receiving openings, the edges of said container-engaging openings can be engaged with said downwardly facing surfaces of said containers to retain the latter in the carrier.

2. A carrier blank as claimed in claim 1 wherein the neck-receiving openings are in a row.

3. A carrier blank as claimed in claim 2 wherein the blank is shaped to provide a linear edge parallel to the row of neck-receiving openings, said linear edge constituting the said adjacent edge and defining, between itself and the row of openings, the wide marginal portion, which is common to the openings of said row.

4. A carrier blank as claimed in claim 1 wherein the neck-receiving openings are in a pair of spaced-apart parallel rows.

5. A carrier blank as claimed in claim 4 wherein the blank is shaped to provide a pair of parallel linear edges which are parallel to the rows of neck-receiving openings, each said linear edge constituting the respective adjacent edge corresponding to a respective one of the rows of openings and defining, between itself and the respective row of openings, a respective wide marginal portion which is common to the openings of said row.

6. A carrier blank as claimed in claim 4 or 5 wherein the blank is provided with a central line of weakness midway between the parallel rows, whereby the blank may be separated into two halves.

7. A carrier blank as claimed in claim 4, 5 or 6 wherein the blank is provided with a transverse line of weakness whereby the blank may be separated into two parts each of which contains one or more of the apertures from each of the rows.

8. A carrier blank as claimed in any preceding claim wherein the element of sheet material is substantially rectangular.

9. A carrier blank as claimed in any preceding claim wherein a plurality of slits are provided in the blank around each of the neck-receiving apertures which are smaller than closure caps of the containers, said slits extending radially outwards from the respective neck-receiving apertures and defining, around the latter, marginal sections which will yield, upon introduction of a container neck into the aperture, to permit the closure cap of such container to pass therethrough.

10. A carrier blank as claimed in any preceding claim wherein each container-engaging opening is defined by an arcuate cut the ends of which extend away from the respective adjacent edge of the blank and terminate at a folding line whereby the edge of said container-engaging opening can be engaged beneath the cap of the respective container whilst the material of the blank within the arc of the cut overlies said cap.

11. A carrier blank, for necked containers substantially as hereinbefore described with reference to and as illustrated in Figs. 1 to 6 or in Fig. 7 of the accompanying drawings.

12. A carrier, for containers, formed from the blank of any one of the preceding claims.

13. A container package comprising a carrier formed from the blank of any one of claims 1 to 11 in combination with a plurality of necked containers each of which is arranged rier formed from the blank of any one of with its neck projecting through a respective one of the neck-receiving openings and each of which has, around its neck, a downwardly facing surface engaged by the edge of a respective one of the container-engaging openings.

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COMPLETE SPECIFICATION

3 SHEETS

This drawing is a reproduction of
the Original on a reduced scale
Sheet 1

FIG. 1

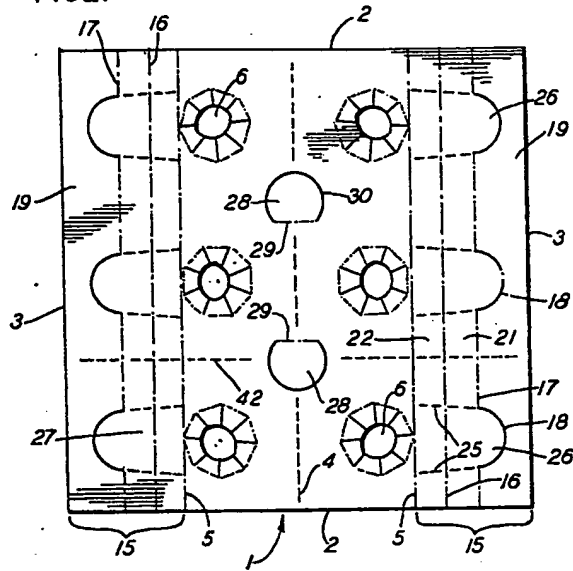
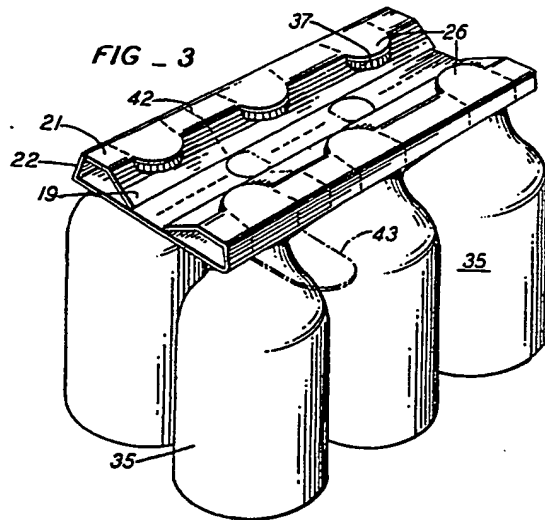
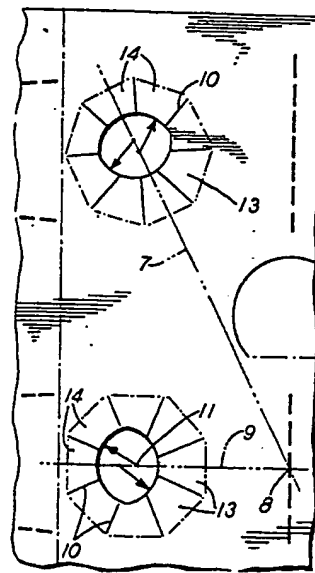


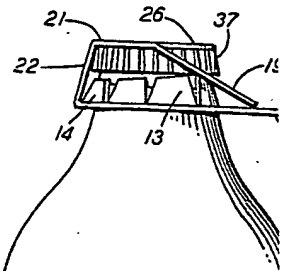
FIG. 3



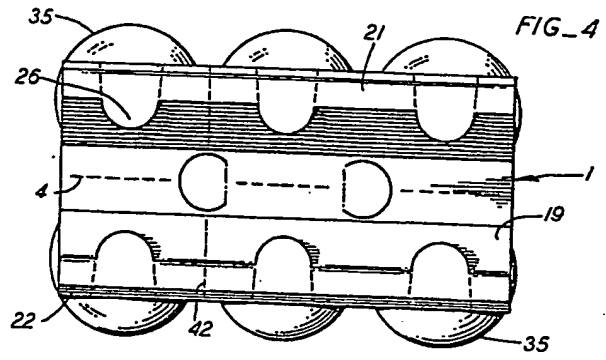
FIG_2



FIG_5



FIG_4

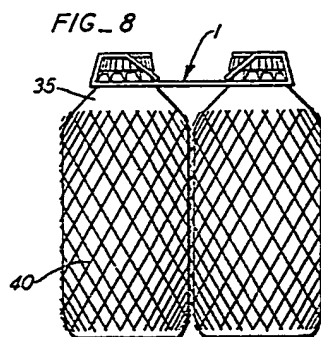
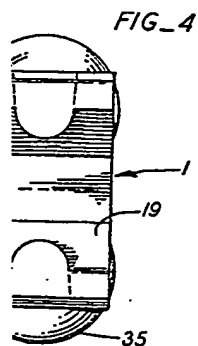
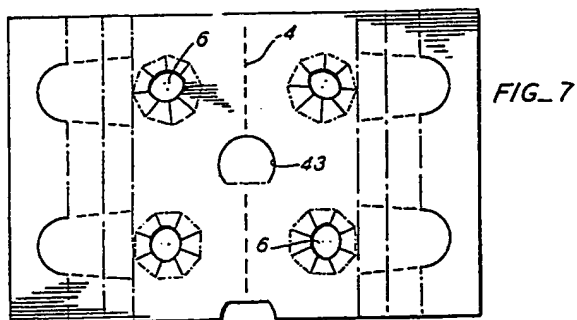
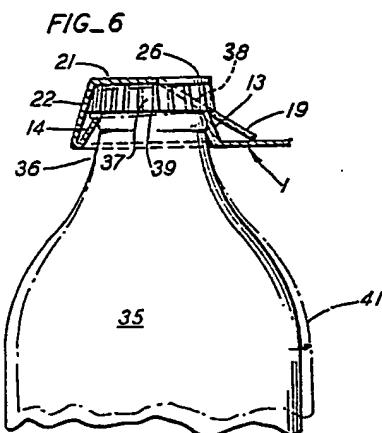
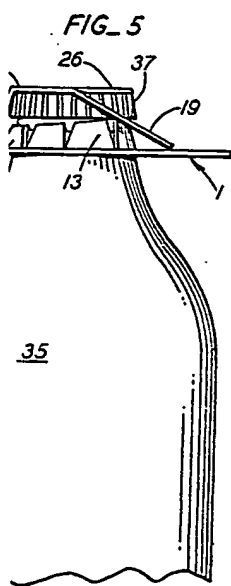


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3 SHEETS

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Sheets 2 & 3



Sheets 2 & 3

